

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Office Action dated September 1, 2005, has been received and its contents carefully reviewed.

Claims 1-11, 14-17, 19, 21 and 22 have been amended, and claim 23 has been canceled. Claims 1-22 remain pending in this application.

In the Office Action, claim 1 was objected to because of informalities. Claims 2-11, 14-19, and 21 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 2, 4-6, 19, 21 and 22 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,782,263 to Schlack (hereinafter "Schlack"). Claims 3 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Schlack in view of U.S. Patent No. 5,164,631 to Lee (hereinafter "Lee"). Claims 7, 8, and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Schlack in view of U.S. Patent No. 6,504,293 to Koizumi (hereinafter "Koizumi"). Claims 9, 10, 13-18, 20 and 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Schlack in view of U.S. Patent No. 6,242,852 to Nakamura (hereinafter "Nakamura").

Claim 1 has been amended to include the missing inequality symbols, so the objection regarding claim 1 is overcome.

The rejection of claims 2-11, 14-19, and 21 under 35 U.S.C. § 112, second paragraph, is respectfully traversed and reconsideration is requested. The Examiner states: "The term 'about' is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention." (See Office Action, page. 3.) In the interest of furthering the prosecution of this case, applicant as amended claims 2-11, 14-19, and 21, therefore this rejection is now moot.

The rejection of claims 1-2 and 4-6 is respectfully traversed and reconsideration is requested. Claims 1-2 and 4-6 are allowable over the cited references in that each of these claims recites a combination of elements including, for example, "a holder for encompassing the

sleeve, wherein H denotes a height of the cathode structure, C denotes a height of the base metal, D denotes a length of the holder, and H, C, and D satisfy the condition of $-0.6\text{mm} \leq (H-(C+D)) \leq 0.4\text{mm}$.” Schlack does not teach or suggest at least this feature of the claimed invention.

There is no specific disclosure in Schlack that gives values for H, C, and D such that $H-(C+D)$ is in the range specified. Accordingly, claims 1-2 and 4-6 are allowable over Schlack.

The rejection of claims 19 and 21 are respectfully traversed and reconsideration is requested. Claims 19 and 21 are allowable over the cited references in that each of these claims recites a combination of elements including, for example, “a holder for encompassing the sleeve, wherein a length from a lower end of the base metal to an upper end of the holder is in the range of about -0.6 mm to about 0.4 mm.” Schlack does not teach or suggest at least this feature of the claimed invention.

The length from a lower end of the base metal to an upper end of the holder is illustrated in Fig. 4 of the present invention as E. There is no specific disclosure in Schlack that gives any values for E, so there is not disclosure in Schlack of E in the range specified. Accordingly, claims 19 and 21 are allowable over Schlack.

The rejection of claim 22 over Schlack is now moot as claim 22 has been amended to include the limitations of claim 23.

Claims 3 and 7-18 are allowable over Schlack for the reasons stated above regarding claim 1. Further, Lee, Koizumi, or Nakamura do not cure the deficiencies of Schlack, so claims 3 and 7-18 are allowable over Schlack, Lee, Koizumi, and Nakamura.

Claim 20 is allowable over Schlack for the reasons stated above regarding claim 19. Further, Nakamura does not cure the deficiencies of Schlack, so claim 20 is allowable over Schlack and Nakamura.

The rejection of claim 22, which now incorporates the subject matter of claim 23, is respectfully traversed and reconsideration is requested. Claim 22 is allowable over Schlack and Nakamura because there is no motivation to combine Schlack and Nakamura. In Nakamura the strap 29 fixes the sleeve 10 inside the holder 20a. In Schlack, the holder 24 and the sleeve 18 are in direct contact and welded together at an end distal from the emitting end. (See col. 2, lines 56-60.) Because the sleeve is directly welded to the holder, there is no need for a strap. Further,

there is no teaching that the using of the strap instead of the direct contact to fix the sleeve in the holder would provide any benefit. Accordingly, Applicant respectfully submits that claim 22 is allowable over the cited references.

Applicants believe the foregoing amendments place the application in condition for allowance and early, favorable action is respectfully solicited.


If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. § 1.136, and any additional fees required under 37 C.F.R. § 1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. *A duplicate copy of this sheet is enclosed.*

Respectfully submitted,

Dated: December 1, 2005

By



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